

Date: Tue, 20 Apr 93 04:30:17 PDT
From: Ham-Policy Mailing List and Newsgroup <ham-policy@ucsd.edu>
Errors-To: Ham-Policy-Errors@UCSD.Edu
Reply-To: Ham-Policy@UCSD.Edu
Precedence: Bulk
Subject: Ham-Policy Digest V93 #106
To: Ham-Policy

Ham-Policy Digest Tue, 20 Apr 93 Volume 93 : Issue 106

Today's Topics:

 CW = effective utilization? (2 msgs)

Send Replies or notes for publication to: <Ham-Policy@UCSD.Edu>
Send subscription requests to: <Ham-Policy-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Policy Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-policy".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 19 Apr 1993 13:55:00 GMT
From: usc!zaphod.mps.ohio-state.edu!darwin.sura.net!knuth.mtsu.edu!raider!
theporch!jackatak!jackhill@network.UCSD.EDU
Subject: CW = effective utilization?
To: ham-policy@ucsd.edu

> >...Well, you're hell bent on flaming the CW guys.....
> What??? Where have I flamed a CW guy?

Hmmmm. I saw this in my "Thoughts for the day" and just could not help
myself...I *HAD* to share this here...

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Date: 16 Apr 1993 08:05:00 -0600 (MDT)
From: Dan Galvin <galvin@tamuts.tamu.edu>

 I'm walking home from school,
 and I'm watching some men building a new house,
 and the guy hammering on the roof
 calls me a paranoid little weirdo..... in Morse code.

 -Emo Philips

-----8><-----

Now, ifn' you can't chuckle at that, you may be taking this all far too seriously...Amateur Radio *is* basically, a hobby, and is intended to be fun!

73

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+-----+
| Jack GF Hill          |Voice: (615) 459-2636 - Bicycling and SCUBA Diving |
| P. O. Box 1685        |Modem: (615) 377-5980 - Compu$erve 76427,31 |
| Brentwood, TN 37024|jackhill@jackatak.raider.net - Ham Call: W4PPT |
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Date: Mon, 19 Apr 1993 13:07:18 GMT
From: swrinde!gatech!darwin.sura.net!knuth.mtsu.edu!raider!theporch!jackatak!
jackhill@network.UCSD.EDU
Subject: CW = effective utilization?
To: ham-policy@ucsd.edu

kchen@apple.com (Kok Chen) writes:

> Whine? I learned my code, got my ticket and *still* think that
> allocating more Phone privileges to people who can bang out code
> faster is as illogical a rule as they come.

After an ARRL forum discussion (they happen when people with ideas go and talk about them ;^) where I complained about the apparent catch-22 of Amateur Radio Service's charter under part 97: we are to experiment and further the state of the art, BUT we are not permitted, save under STA, which requires a great deal of "grant writing" skill to prepare and which narrows the focus of the experiments so tightly as to prevent the wonderful occasional "ah HAH!" to use "new" modulation or emission techniques. This apparent contradiction, and the "play by the rules" attitude I had beaten into me as a child have prevented my own experimentation with new technologies. Perhaps there is merit to *NOT* correlating additional PHONE spectrum with CW proficiency.

> For that matter, I am all for a flat licensing system. No code
> above 30 Mc/s and 3 wpm for full HF privileges.

I am not at all sure I'd go quite that far. Note that all arguments against the Morse requirement aside, the drive to learn the code and experience the HF spectrum, and to gain even more spectrum by pushing more theory and rules (and CW) is alive and well. Lots of people come in as VHF Technicians and stay to become General, Advanced and Extra, and that is the best advertisement for a no-code entry point and subsequent upgrade requirements I can think of...it seems to work!

> Let's turn the table around: why is it that few of the "old
> generation" ever got off their butts and get "motivated" to learn
> object oriented programming? Must be something wrong with them,
> huh? Damn, maybe them folks are just as lazy as the young 'uns.
Nope. I was a Certified Developer for the Mac, writing my Pascal on a
Lisa and porting it across BEFORE 1984...and I started writing code
(FORTRAN) in 1958...I am an _OLD_ Fart and I am still _VERY_ curious
and motivated to learn.

> Just my two cents' worth. (Don't worry, two cents didn't buy you
> anything when I was a kid, either :-) :-).
Another "newbie"! ;^) 2cents would buy enough candy to get mom upset
about my teeth when I was a lad! And, it bought 4/5 of a 6 1/2 oz
bottle of Coke... Three kids with 2 cents each could split a Coke and
have some candy, so like today, when you put the 2 cents together and
cooperate, things happen! ;^)

73

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Date: 20 Apr 1993 12:55:40 +0300
From: mcsun!news.funet.fi!butler.cc.tut.fi!lehtori.cc.tut.fi!not-for-
mail@uunet.uu.net
To: ham-policy@ucsd.edu

References <1993Apr19.154848.19613@ve6mgs.ampr.org>,
<1993Apr19.174801.27371@nntpd2.cxo.dec.com>,
<1993Apr19.231621.12745@leland.Stanford.EDU>p
Subject : Re: 00 != Slow

paulf@umunhum.stanford.edu (Paul Flaherty) writes:

> Again, balkanizing Shannon's law is not an option.

> The simple truth of the matter is that amateur HF spectrum is a limited
> resource, and that we currently ration it according to a licensee's
> willingness to learn a more spectrally efficient manual transmission method.

I don't see how you can call a modulation method spectrally efficient
if it requires 50 - 100 Hz to transfer 20 WPM (about 12 bit/s) and it

is even less efficient at lower speeds.

As Shannon's law has been mentioned, the channel capacity for 50 Hz bandwidth at 2 dB S/N (the lowest figure I have seen for EME) is about 70 bits/s (more than 120 WPM) and for bandwidth 100 Hz at 10 dB S/N the channel capacity is about 350 bit/s.

If the manual method is that inefficient, then it is time to develop more efficient methods.

The figures derived from Shannon's law are absolute limits, but a good communication system can reach 50 % of these values (e.g. 14.4 kb/s modems on ordinary telephone lines).

Paul OH3LWR

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Date: 20 Apr 1993 12:54:51 +0300
From: mcsun!news.funet.fi!butler.cc.tut.fi!lehtori.cc.tut.fi!not-for-mail@uunet.uu.net
To: ham-policy@ucsd.edu

References <RFM.93Apr14232311@urth.eng.sun.com>, <25144@ksr.com>,
<1993Apr19.233335.9157@stortek.com>tori.c
Subject : Re: EME absolutely needs 1500 watts? (was Re: 1500 watts too much?)

georgen@stortek.com (George Noyes x5698) writes:

> I agree that 100w is "possible" but until you try it, then you'll find
> out why the "possible" is in quotes! You really neeeeeeed as much power
> as you can muster with any kind of reasonable antenna! I think we should
> lobby for a 2.5 KW limit for us Moon Bouncers!

You need a lot of power if you insist of using CW (A1A) and send it by hand and copy it by ear. This is in practice an asynchronous mode as you have to hear the start and the end of each dit or dah. If you drop the speed too low, you are trying to hear if the carrier is present or absent. The brain

doesn't integrate this kind of signal very well.

Using an electronic keyer at a predefined speed makes it possible to electronically integrate the signal for a dit period at a time and you do not have to rely on getting the edge of the signal correctly.

Using different frequencies for mark and space (F1A) makes it easier to compensate for gain and noise variations and thus enable longer integration times. Take a FFT of the received signal and check which bin has most power in it and declare it as mark or space. This kind of processing is most suitable to combat background noise.

To combat libration fading one could repeatedly send a frame at predefined intervals at moderate speeds and sum the received signal with signals that have been delayed for one or more frame times. The accumulated signal could be copied by ear or by machine.

As the required *effective* throughput rate is very low, you could trade transmission time for transmitted power. Most development in EME has been done for better antennas, bigger transmitters and better preamps but now as the price for advanced signal processing is constantly dropping, it is time to look for new ideas from e.g. radio astronomy or from SETI.

By limiting the output power to a reasonable value, you have to search for new ideas.

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End of Ham-Policy Digest V93 #106
